1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

blocks or metates, though it is manifest that most of the camps were fireless and many fireless. It is particularly noteworthy that even the more temporary resting-places are seldom if ever less than a mile or two from the nearest fresh water. In short, the Seri are not a domiciliary folk, but rather homeless wanderers, customarily roving from place to place, frequently if not commonly sleeping where overtaken by exhaustion or storm, ordinarily slumbering through a part of the day and watching by night, habitually avoiding fresh waters save in hurried and stealthy visits, and apparently gathering in their flimsy huts only on special occasions. 361 [312]

In conformity with their rovingness the Seri are notable burden-bearers. They habitually carry their entire stock of personal belongings (arms, implements, utensils, and bedding), as well as their stock of food and—weightiest burden of all—the water requisite for prolonged sustenance amid scorching deserts, in all their wanderings, the water being borne chiefly by women, in ollas, either balanced on the head singly or slung in pairs on rude yokes like those of Chinese coolies. And they have never grasped the idea of imposing their burdens on their bestial associates; their coyote-curs are not harnessed or even led; when they surround and capture horses, burros, and kine they make no use of ropes, never think of mounting even when pursued by vaqueros, but immediately break the necks or club out the brains of the beasts, perchance to tear the writhing body into quarters and flee for their lives with the reeking flesh still quivering on their sturdy heads and brawny shoulders—and scores of vaqueros agree in the affirmation (wholly incredible as it would be if supported by fewer witnesses) that even when so burdened the Seri skim the sand wastes of Desierto Encinas more rapidly than avenging horsemen can follow. 482 [231] 224 177 [481]

The hardly conceivable fleetness of the Seri is conformable with their habitual rovingness and their ability as burden-bearers; and this faculty is established by cumulative evidence so voluminous and consistent as to outweigh the presumption arising from the standards attained among other peoples. A few minutes after they were photographed, the group of boys shown in plate XVI, with several others of about the same size, provided themselves with a stock of their favorite human-hair cords, "rounded up" a dozen mongrel coyote-dogs haunting the rancheria at Costa Rica, and herded the unwilling animals toward a shrubbery-free space a quarter of a mile away, in order to race them in imitation of the work of the Mexican cowboys earlier in the morning. From time to time as they went a frightened cur sneaked or broke through the cordon of boys, and made for distant shrub-tufts at top speed; yet in every case a boy darted from the ring, headed off the animal within one or two hundred yards, and lashed it back to its place. On arriving at their miniature rodeo the boys widened their ring, and at a signal scattered and frightened the dogs; then, when the fleeing animals had a fair start, each selected his victim and fol- 177 231 481 857

I: McGee E-5 (1894-1895)1898 NU31 Seri NU31

lowed it, yelling and swinging his light lasso, until, after much doubling and dodging and many unsuccessful casts, he caught and dragged the howling beast back to the open; and it was only after half a dozen repetitions that enough dogs had escaped to spoil the sport. As the boys lounged chattering back toward the ranchería their course lay between two clumps of the usual desert shrubbery, so placed that when the first was obliquely left and 40 or 50 feet distant from them, the other was obliquely right and 100 feet away. At this point a bevy of small birds (perhaps blackbirds—at any rate corresponding to blackbirds in size and flight) fluttered suddenly out of the nearer clump toward the more distant one, when, too instantaneously for the untrained eye to catch exchange of signal or beginning of movement, the boys lunged forward in a common effort to seize the birds; and though none were entirely successful, one exultantly displayed a tuft of feathers clutched by his fingers as the bird darted into and through the thorny harbor. When the distances were paced it was found that, although the birds had the advantage of the start, the boys covered at least 90 per cent of their distance in the same time; while the spontaneity of the impulse demonstrated habitual chase of flying game under fit conditions.

While obtaining the Seri vocabulary with Mashém's aid, advantage was taken of every opportunity to secure collateral information concerning the actual use of the terms, and thereby of gaining insight into the tribal habits. Through his naive explanations, usually repeated and corroborated by the elderwoman of the Turtle clan (Juana María) and others of the tribe, it was learned that half-grown Seri boys are fond of hunting hares (jack-rabbits); that they usually go out for this purpose in threes or fours; that when a hare is started they scatter, one following it slowly while the others set off obliquely in such manner as to head it off and keep it in a zigzag or doubling course until it tires; and that they then close in and take the animal in their hands, frequently bringing it in alive to show that it was fairly caught—for it is deemed discreditable, if not actually wrong, to take game animals without giving them opportunity for escape or defense by exercise of their natural powers. Similarly, Mashém described the chase of the burro and other deer as ordinarily conducted by five persons (of whom one or two may be youths), who scatter at sight of the quarry, gradually surround it, bewilder it by confronting it at all points, and finally close in either to seize it with their hands, or perhaps to brain it with a stone or short club; the former being held the proper way and the latter a partial failure. This hunting custom, described as a commonplace by Mashém, is established by the vaqueros who had frequently witnessed it from a distance; and the same extra-tribal observers described still more striking feats of individual Seri hunters: Don Manuel, son of Señor Encinas, and Don Ygnacio Lozania were endeavoring to train to work a robust Seri (one of a band sojourning temporarily at Costa

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

224 While by far the larger share of Seri sustenance is drawn from the sea, a not inconsiderable portion is derived from the land; for the warriors and striplings and even the women are more skilful hunters than fishers.

The larger objects of the feral chase are deer of two or three species (the bura, or mule-deer, being most conspicuous and easiest taken), antelope, and mountain sheep; to which the puma, the jaguar, and perhaps two or three other carnivores might be added. The conventional method of taking the bura and other deer is a combination of stalking and coursing, usually conducted by five of the younger warriors, though three or four may serve in emergency; any excess over five being regarded as superfluous, or as a confession of inferiority. The chase is conducted in a distinctly ceremonial and probably ritualistic fashion, even when the finding of the game is casual, or incidental to a journey: at sight of the quarry, the five huntsmen scatter stealthily in such manner as partially to surround it; when it takes fright one after the other strives to show himself above the shrubbery or dunes in order to break its line of flight into a series of zigzags; and whether successful in this effort or not they keep approximate pace with it until it tires, then gradually surround it, and finally rush in to either seize it in their hands or cripple it with clubs—though the latter procedure is deemed undignified, if not wrong, and hardly less disreputable than complete failure. When practicable the course is laid toward the rancheria or camp; and in any event the ideal finish is to bring the animal alive into the family group, where it may be dissected by the women, and where the weaklings may receive due share of the much-prized blood and entrails. The dissection is merely a ravenous 264 rending of skin and flesh, primarily with the teeth (perhaps after oblique bruising or tearing by blows with the hupf over strongly flexed joints), largely with hands and fingers aided anon by a foot planted on the carcass, and partly with some improvised device, such as a horn or tooth of the victim itself, the serrated edge of a shell cup, or perhaps a sharp-edged cane-splint from a broken arrow carried for emergency's sake. Commonly the entire animal, save skin and harder bones, is gulped at a sitting in which the zeal of the devotee and the frenzy of the carnivore blend; but in case the group is small and the quarry large, the sitting is extended by naps or prolonged slumberings, and [252] the more energetic squaws may even trouble to kindle a fire and partially cook the larger joints, thereby inciting pallid appetite to new efforts. Finally the leg bones are split for the marrow and their ends [237] preserved for awls; the horns are retained by the successful huntsman as talisman-trophies; while the skin is stretched in the desert sun, [281] scratched and gnawed free of superfluous tissue, rubbed into partial 224 pliability, and kept for bedding or robe or kilt.

857 The chase of the hare is closely parallel to that of the deer save that it is conducted by striplings, who thereby serve apprenticeship in hunt-

I: McGee E-5 (1894-1895)1898 NU31 Seri NU31

ing and at the same time enrich the tribal larder with a game beneath the dignity of the warriors; while still smaller boys similarly chase the rabbit, which is commonly scorned by the striplings. The conventional hare-hunting party is three, and it is deemed disreputable to increase this number greatly. The youths spread at sight of the game and seek to surround it, taking ingenious and constant advantage of the habit of the hare to run obliquely or in zigzags to survey more readily the source of its fright; for some time they startle it but slightly by successive appearances at a distance, but gradually increase its harassment until it bounds hither and thither in terror, when they rapidly close in and seize it, the entire chase commonly lasting but a few minutes. The quarry is customarily taken alive to camp, where it is quickly rent to fragments and the entrails and flesh and most of the bones consumed; the skin usually passes into possession of a matron for use as infantile clothing or cradle bedding, while the ears are kept by the youth who first seized the game until his feat is eclipsed by some other event—unless chance hunger sooner tempts him to transmute his trophy into pottage.

While the collective, semiceremonial style of chase alone is thoroughly good form in Seri custom, it is often rendered impracticable by the scattering of the tribe in separate families or small bands, in which case the bura and its associates, like the larger carnivores customarily, are taken by strategy rather than by strength. This form of chase is largely individual; in it archery plays a leading rôle; and in it, too, ambuscade, stealthy lying in wait, and covert assault attain high development. It is closely analogous with the warfare typical of the tribe; and it is especially noteworthy as one of the most effective stimuli to intellectual activity, and hence to the development of invention—if the term may be applied to industrial products so lowly as those of the Seri.

The chief artifact produced by the strategic chase on land would seem to be the analogue of the harpoon used at sea, i. e., the arrow. This weapon is one of the three or four most highly differentiated and thoroughly perfected of the Seri artifacts, ranking with canteen-olla and balsa, and perhaps outranking the turtle-harpoon. It is fabricated with great care and high skill, and with striking uniformity in details of material and construction. A typical example is 25 inches in length and consists of three pieces—point, foreshaft, and main shaft (feathered toward the nock). The foreshaft is 8¼ inches long, of hard wood carefully ground by rubbing with quartzite or pumice into cylindrical form, about three-eighths of an inch in diameter at the larger end and tapering slightly toward the point; the larger end is extended by careful grinding into a tang which is fitted into the main shaft, the joint being neatly wrapped with sinew. This main shaft is a cane-stalk (*Phragmites communis*?) 15 or 16 inches long, carefully selected for size and well straightened and smoothed; it is feathered with three equidistantly-

262 important source of meat for the Seris, and sea-gulls are occasionally killed and likewise abandoned, except when famine threatens. The above examples most likely apply to other varieties of animals as well.

No specific food taboos were discovered in the course of field work except the unexplained reluctance to eat certain species. McGee (1898) reports a taboo on eating sea-lions but my informants asserted that these mammals were hunted in the past for both their flesh and hide. All of my informants denied that the Seris eat cougars, and this abhorrance has been confirmed by the Mexicans. Yet the Mexicans themselves do hunt and eat these big cats. McGee 225 (1898:196, 202) again casually mentions cougars and jaguars as being hunted by by the Indians but gives no evidence for this. It should be mentioned that only a few Seris know what sort of an animal the jaguar is, and these know it only from hearsay as "huge animal inhabiting the mountains far in the interior". There are occasionally some migrant jaguars in Seri territory.

Pets

231 The Seris have only a limited variety of pets. Dogs are very numerous, each family keeping many of them. Although they maintain that the dogs are acquired in order to keep the coyotes away from the camps, there is nothing in their camps that a coyote would want to steal. There are a few cats and several species of wild desert doves which are often caged. Wild animals in captivity are, as a rule, those which accidentally come into the hands of the Indians. On one occasion a badger was kept tied to a house post for a couple of weeks and fed on fish heads, snakes, lizards and water until one night when it made its escape.

257 Of the insects, only the singing male Cicadas are captured by the roving Seri boys. These are tied to a long thread and having their fore-wings partly clipped, they are released into the air like kites. Local Mexicans also provide a similar kind of toy for their children.

Classification of Animals

215 Seri taxonomic notions of the animal world are vague and indistinct. No conscious classification exists and perhaps none should be expected of non-literate people. But there is a random association of animals based on the external similarities of form, habits and habitat. A clear distinction is made between plants and animals. Quite obscure animals, for example, the Echinoderms, Holothurians, Coelenterates or barnacles, are classed as animals and not as plants. It seems that voluntary movement is used here to distinguish the two categories. Thus, informants insisted that sea-anemones and jelly-fish are animals and not plants. One difficulty arises in the case of sessile barnacles. It is hard to account why those growing on the sea-turtles are classified as animals and are called "turtle fleas".

In the assemblage of major animals, the mammals form one group and birds and fish others. Since general similarity of form and not real structural affinities are the primary reason for these associations, the bats "are not birds, but are probably mammals because they have fur". Thus, sharks and

8: Ascher E-5 (1960) 1962 NU31 Seri NU31

McGee (1898:214)

estimated that maritime resources provided two-thirds of the Seri diet. Kroeber (1931: 20), approximately 30 years later, estimated the proportion at about three-fifths. In the winter of 1960, 30 years after Kroeber's visit, the Seri were obtaining at least three-fifths of their food from the sea.

In pursuit of their main source of subsistence, the Seri travel up and down the narrow coastal band. In the winter of 1960 they were occupying one temporary camp toward the southern end of the band and a permanent camp at the northern extreme. Seri women and children gather molluska; fishing is a male occupation. In addition to gathering and fishing for their own needs, the Seri dispose of a portion of their catch on the commercial market. This enterprise began about 1930, and was encouraged by the establishment, in 1958, of the Sociedad Cooperative de Produccion Pesquera Seri with the cooperation of the Mexican government.

The Pacific green turtle constitutes the largest single item in the Seri diet for at least six months of the year—from January to June—and it is also caught occasionally at other seasons. In 1896 McGee estimated that it provided 25 per cent of the total food supply. Emphasizing the intimate ecological relationship between the Seri and the turtle, McGee (1898: 186-187) wrote:

> ... perhaps half of the aggregate life of the tribe is spent within easy reach of its [the turtle's] feeding and breeding grounds, and tribesman and turtle have entered into an inimical communality something like that of the Siouan Indian and buffalo in olden time. ...

Kroeber (1931: 20) believed that McGee stressed the Seri-turtle relationship too strongly and overestimated its contribution to the diet. McGee (1898: 187), in support of the importance of the turtle to the Seri, points to the fact that the turtle carapace is used for, among other things, a house covering and buckler, a cradle, a coffin, and footgear. The carapace is currently used for supporting and roofing houses and as a starvation food. The contribution of the turtle to the diet varies from year to year, but observations made in 1960 suggest a range of from 15 to 20 per cent as a reasonable estimate.

Seri men fish for turtle from boats, which are manned by two or three men and are propelled by oars, sails, outboard engines, or any combination of the three. The boats operate either individually or in groups. The men fish by night or day, depending on the weather and sea conditions. When they fish at night, they use a kerosene lamp to attract turtles to the surface. The principal implement is the harpoon.

The harpoon tackle of the Seri is illustrated in Figure 1. It consists of a foreshaft (c-h), a mainshaft (j-k), and an extension cord (i). The component parts of the foreshaft are a projectile point (c), a gasket (d), a wrapping cord (f), a hafting base (g), and a lead cord (e and h). In preparation for turtle fishing, the hafting base (g) is plugged into the socket (j) on the main shaft (k), and the extension cord (i) is looped through the lead cord (h).

262 178 I have no idea, of course, what the diet may have been in the past since only archaeology can suggest the answer. But I am sure that there has been much change in their diet since Kroeber saw them, not in the basic pattern but in the composition. With the introduction of hook and line [177] fishing, the percentages swung in favor of fish, while decimation of the marine turtle cut down [226] the importance of this animal. Simultaneously, 262 the Seris now have available manufactured or [177] imported Mexican food items: flour, sugar, rice, [439] potato (when no one is looking; potatoes are not supposed to be sold to them because they make *tepache* from them which makes them grossly fish in cans, coffee and tea. Dependence on the products of the desert has dwindled. Rattlesnakes, desert turtles and chuckawalla still find their way to the Seri kitchen but not too frequently. Pelican and sea gull will be eaten only when rough times beset them but are disdainfully refused at other times. My own estimates, impressions not supported by any attempt to measure their diet, are as follows:

fish	50+%
turtle	8
Mexican import	20
desert plant	7
desert land animals incl. stock	5
shellfish	10
total marine origin	68+
total desert origin	12
imported origin	20

224 178 [685] Another important change in the pattern is the unquestionable decrease of hunting (other than marine animals) in Seri life, as of the domestic stock stealing, the place of which has been taken in a way by the dependence on manufactured foods and items. Hunting nowadays is done rarely and only few individuals will devote some months out of the year to it. Stealing of domestic stock [685] has ceased for practical purposes, since in the past it lead to virtual extermination of these Indians. Occasionally the Seri kill off a semi-wild burro, herds of which run about loose in the desert or they'll get leavings off one, hunted down by a Mexican trader or fishermen.

411 224 The Seris' basic tools of game procurement have changed. Bow and arrow were still much in evidence and in use in McGee's time but seem to have gone out soon after. Kroeber did not mention them and by now they are quite extinct, except as ● [857] clumsy toys little boys use to play with. The throwing stick is still used on rabbits—any stick one can scrounge on a moment's notice will do for the purpose. If any traps or falls had been used we do not know of them. Accidental stones may be used much in the same way as throwing sticks. In general, various sorts of fire arms, mostly .22 and .38 [177] caliber are owned by a good many Seri men and have replaced other weapons in the terrestrial hunt.

226 411 177 More important are changes in the fishing procedures. Formerly spear and detachable harpoon were their only marine weapons. Even as late as 1930, during Kroeber's visit, the Seris made no use of hook and line. But now, hook and line of

[P. 7A]

apparently a line of type has been omitted here-Analyst]

462 desert plants or littoral fishlets from tide-pools or of the shellfish. Both men and women will [224] bring in an occasional rattler, although women are more likely to do this because they spend more [857] time in the desert. Children of both sexes are engaged in the female occupations here, but ado- [883] lescent boys already join in their fathers' hunts on land or sea.

342 Housing has undergone some changes. In the 184 desert or on Tiburon the Indians construct the kind of shelter they did in the recorded past, an ocotillo frame, bent over in the middle and covered up with dried plant debris and twigs from the desert, or with the sail cloth. But in Desemboque they have more substantial houses— of wattle and adobe, with flat roofs, rectangular or square, often with corrugated tin or drift planks and other debris piled up on top, or along the walls.

178 In the remainder of their material culture, not much has been left from years past although one must remember that from the very beginning of recorded Serian history it has been of a most [291] meager sort. Pelican robes, which some Seris ap- [412] parently still wore in 1930 are gone for good. So are the stone tools. So is the pottery which had [323] probably disappeared in Kroeber's time. The hu- [301] man hair necklace with rattlesnake rattles is also a thing of the past. The rattlesnake skin belts [291] McGee (1898:170) described and figured are probably all gone. I havn't seen or heard of any.

412 But what remains much as they had been in 285 1894 are the bone-awls. These are made of burros' carpals and the blossoming of basketry, owing to

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262 pelicans are not; they are regarded as "bad food," unfit for eating. No further explanation has been offered here and it might be that the same sort of prejudice works here as in the case of the adult birds. Otherwise, reasons for rejecting eggs for food are probably a matter of mere customary attitude without any particular rationalization. In a few instances, the dove being one example, the eggs were said to have been rejected because they were "too small to bother."

237 291 Other economic uses made of the birds are extremely few. At one time, the pelican skins were used for clothing and, in fact, in McGee's time they represented, perhaps, the most important item of clothing for the Seris, having been worn in shape of wrap-around robes, usually covering the lower part of the body. Moreno reported these robes as still is use "30 years ago or more," in the early twenties, but in Kroeber's time these [177] robes were already discarded in favor of the European garment. The Seri, nevertheless, still preserve skins of these birds—the white pelican, [439] larger of the two, always had been favored here—and occasionally sell them to the visitors. Another 237 use made of the feather is in the arrows. The 411 cormorants, heron and the owls had been especially mentioned in this connection. But it is certain that they were not the only birds so exploited and also that this particular use went out of business along with the disappearance of the bow and arrow as the principal weapons. The use of feather for arrows may well continue into the present in a somewhat degraded form. The Seri boys play a ● [857] great deal with bows and arrows, shooting them at any moving available target. They'll pick up any available feathers.

Pets

231 Somewhat desultory use is made of birds as pets. During my visit I have seen doves and an egret kept in houses as pets by the adults and fed quite frequently. The number and variety of birds which may become pets in households may well * 825 be larger. Pelicans and sea-gulls are less fortunate. They are often shot at and over-powered by 857 the boys. But instead of taking them to the households, the boys stage games, shooting them at point blank from bows and arrows and pea- shooters. These somewhat bloody executions take place almost every day. The pattern is the same. Only the subject of the game changes, depending on the available species of bird or animal.

Hunting

223 It is hard to speak of hunting in connection with birds, because there is so little effort made to go out and get them. The main exception is the duck and this, as I already mentioned, is hunted on Isla Patos and clobbered at night with sticks and stones in great numbers. This is one of the few instances in which the Seris will go out of their way to get a bird. Sea-gulls and cormorants and, more rarely, pelicans are dispatched by pea- [411] shooter (stone), sticks, small clubs and, on occasion, with a shot from a .22 caliber rifle.

[P.18A]

9:Malkin E-5 (1953-1955)1962 NU31 Seri NU31

*825 unmistakenly, nests in the mangroves of the Estero Sargente. Finally, the seagull is supposed to nest only on San Esteban, Isla Raza and Isla Patos which is not surprising when we consider the Seris' interest in the sea-gull eggs and the relentless persecution to which the adults are subjected.

Eggs

Along with some knowledge of the nesting habits, the Seris seem to have fairly detailed knowledge of the birds' eggs. Undoubtedly the prowling habits of the Seri boys help the matter. In any case, they were able to give a fairly detailed account of the number of eggs laid by each of the 11 species discussed above and of the size and color of the eggs. The number varied from species to species, from four (raven, hummingbird) to 8-9 (pelicans). On the whole, the size given increased with the size of the bird. as one might expect, but not always proportionately. This suggests another evidence for actual observation of these matters. The humming-bird egg has been described as unusually large in proportion to the size of an adult bird which is quite so.

[857]

The time of the deposition of the eggs has been usually indicated as March or April. A nondescript comment "in hot season" has been given for the cormorant. but evidently less is known about this bird and it is said to nest, as already pointed out. on the distant coast of Baja California. The only exception to the rule seems to be the barn owl. Here November has been indicated for the egg laying activity.

Development of the Young

Not much information concerning the nestlings has been obtained and such as there is concerns the time of their emergence. The standard idea on the subject seems to be roughly this: the young emerge one month. more or less, after the eggs are laid, and fly out of the nest a month later yet. Thus the time of emergence has been given in almost always either April or May, and the time of departure in May or June. The only exception is the barn owl where these three events, the Seris think. take place in November, December and January respectively.

From this it is plain that the Seris once more actually observed these matters and that according to them, almost all birds reproduce in the spring after the passing of the cold season but before the onset of the intolerable heat of the Gulf region.

Feeding Habits

Information concerning food habits of the birds is available for all but nine of the species listed in this section. With the sole exception of the humming-bird. dove and the woodpecker. all of the remaining 12 species are considered carnivorous, either predatory or carrion feeders or both. This is not surprising; the shore or marine birds are the most conspicuous and noticeable components of the bird fauna of the region. A majority of the species are said to be fish feeders, although some, like

[P. 19 B]

* 825 237 [322] quite possible but I couldn't substantiate the story from contemporary evidence. Perhaps during the height of the shark hunting for the liver oil, the Seris used the oil also for wood polish, although it isn't very clear just what sort of artifact they make would require such treatment. The wooden tools or artifacts among them are in short supply at all times. Finally, the huge horned manta was supposedly hunted also for its hide but just in what circumstances it was not explained. It is the only fish which the Seri ever mentioned as having been put to such use.

Fishing

226 As already mentioned, fishing nowadays is largely accompanied from flat-bottomed boats with hook and line. The old ways of getting fish by spearing are almost gone for good. Recently, an [177] attempt has been made to teach the Seris siene fishing, but 10 years of these endeavors accomplished only ruination of a number of expensive nets and of much fishing gear and the desertion [157] of the project by the Indians. It may be that their individualistic and almost anarchistic attitudes preclude cooperation, essential in this type of fishing.

The bait is obtained in any one of the three ways: by dynamiting fish in tide pools or along the shore, or by catching small fry with small hook and line, or finally by collecting small fishlets in the tide pools, prying them out from under rocks or simply—and here the Seri boys ex- [857] cel—by shooting them in the tide pools with tiny toy arrows or simply spearing them with a stick. [177] The dynamiting is done with the purchased sticks of dynamite which the Seris obtain in the tiendas. The procedure is often risky and down right dangerous. Some of the Seris have blown themselves up with dynamite. I have seen one of them, who lost both arms and had a jaw broken during a dynamiting trial. He went about with a dirty rag tied up over his head to support the wrecked [164] jaw-bone. He was carried off by measles two years later in the 1955 epidemic.

226 The Seris' commercial fishing is pretty much 648 controlled and exploited by the two or three Mexi- 439 can fish traders from Nogales and Hermosillo. 443 These have their tiendas in Desemboque, which at set price sell things to the villagers. They also provide the Indians with the five horse-power mo- [501] tors for fishing trips and pleasure cruises and with the oil and gasoline essential to run these—also at set price. They finally purchase the fish—at a set price—and from the proceeds the Seris purchase goods at the tiendas, completing the cycle. Not all Seris are compelled to work for the Mexicans, and, in fact, they do not always do so. Some [501] families stay away from Desemboque and depend on the sail and oars for propulsion. They come to the village only once every few months to obtain supplies. Even when in the village, the Seris make little effort to fish for more than they wish to get in order to satisfy their immediate needs.

226 Fishing expeditions usually take place in the morning. Most Seris will set off before daybreak and will return with the catch by 11 a.m. or noon.

*825 439 [226] [415] [435] que (as a result of the ecology of the coastal waters) it is gathered in huge quantities largely on the shores of Tiburon where it is said to occur in great numbers. This animal is gathered in large bulk in 5 gallon gasoline cans and then sold either as finished necklaces at the rate of five pesos each, or as bulk, by the liters, with 20 liters for each gasoline can. There is a steady market for these shells.

226 e) *Bait:* Only the octopus has been reported as used for fish bait for the *pinta*, *baya* and *pescaru*, and I have seen it used in that manner. But it is certain that on occasion the Seri will use also for bait the flesh of some of the shelled smaller molluscs, especially when they wish to capture live fishlets for bait.

Hunting

[462] [857] Collecting of molluscs is almost invariably a job of adult women and of the children of both sexes who at low tides scavenge the exposed mud flats and gather or dig out various marine animals. Some are collected on the surface only. Among those that must be excavated are the octopus and *Nioche* which hide in burrows or mud, respectively. A large shell is usually used as a tool to pry the *Nioche* out.

Taxonomy

*825 Molluscs on the whole are recognized as one group of animals. However, this does not include the octopus and the chitons which are considered as different sort of creatures. Some sort of feeble association between the *Pelecypods* and the *Gastropods* is recognized and various species of both are placed together. I noticed a tendency to consider some of the *Gastropods*, the limpets and *Crepidula* for example, as supposedly having two valves while in fact they are both univalves. The explanation offered for this was "it lost one side," meaning one valve.

Although *Chitons* spend most of their time motionless attached to rocks they are both considered animals. The motions of these animals may not [857] have been observed by the adult, but the Indians, young boys especially, certainly noticed the changed positions after a period of time.

In some instances the Seris observed quite small differences between animals—recognizing them as different species. In the *Neritina* two different forms were correctly identified as representative of the same species, although they differed considerably in size and color. On the other hand *Columbella* and *Solenostira* had been given the same Seri name palémex[x] but were recognized as different kinds of animals.

Sexing

A distinct tendency to consider the molluscan males larger than the females emerges readily from the Seri answers. This can be shown in the table below:

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VIII

CRUSTACEA

136

Scientific	Common Name
Cirripedia	Barnacle
Axius vivesi	Mud-shrimp
Leptodius occidentalis	
Microphyrus platisoma	
Speleophorus schmitti	
Petrolistus armatus	
Callinectes arcuatus	
Glyptoxanthus meandricus	
Pilumnus townsendi	

* 825 All animals in this group are considered live animals—and not plants. This interestingly includes the barnacle. The only way one may account for this is probably the Seris' observation of the cracked barnacles and of the moving flesh inside. Barnacles growing on the marine turtles are also classed as animals, though of a different kind than the barnacles growing on rocks or on the mangroves. They are called *piojos de cahuama*, literally, turtle lice.

The Seris regard *Glyptoxanthus* and *Pilumnus* as the same kind of animal. *Pilumnus* is considered to be merely a large specimen and "maybe an adult," the other *Pilumnus* "is young." When questioned about the reason for the identity the informants pointed out the hairiness of both crabs.

On the other hand, although *Spelenophorus* and *Microphyrus* have the same Seri name, they are considered two different species.

Economy

262 Crustaceans play little role in the Seri diet. Very few are eaten at all and when they are, the amounts are insignificant and they are considered an inferior sort of food. The informants denied that they have eaten any of them in recent years, but allowed that two species, *Callinectes* and *Axius*, had been part of their diet in the past, although how long ago they didn't specify. There is no doubt, however, that in time of frequent [261] sub-famines, the Indians resort to these lowly creatures.

* 825 In addition to this, *Microphyrus* had been mentioned as a fish bait. It is possible that in a pinch [226] other forms are also so used. Finally, the most frequent function that the crustaceans play in the [857] Seri life is as objects of play for the boys who [411] spear them with the miniature two-pronged "puieros."

Sexing

For three species of the crustaceans the Seris indicated distinction differences between the sexes. In the two crabs, *Callinectes* and *Leptodius*, the males have narrow center plate while the female's center plate is wide, which in fact is a well-known sex difference in crab. In *Glyptoxanthus* and *Lep-*

9:Malkin E-5 (1953-1955)1962 NU31 Seri NU31

VIII

CRUSTACEA

* 825 *todius*, they say the male is also much larger than the female although colors of both are alike. We then have here one of the general sexing criteria that runs through the entire animal kingdom.

For the remaining five species, the informants simply din't know how to tell the sexes apart, although they asserted that they are both present.

Age

No data are available for this topic.

Size and Weight

There is little information for this. It appears that the Seri considered the specimens shown to them as representing the usual size for each species. Only in *Callenectes* they indicated that "it grows a little larger."

Food

The Seris have very little information about the feeding habits of the crustaceans; with the exception of two species they simply didn't know what the animals eat. The two, *Leptodius* and *Callinectes*, they believe, are scavengers feeding on dead fish. Of course, with the lot of offal floating along the shore in the Seri encampments such observation is not difficult.

Development

The tendency is to consider the crustaceans as oviparous animals. In half of the species, it is true, the informants didn't know the answer. But the remaining four they indicated laid eggs. It is not amiss to point out here that in these matters, as also in general in matters concerning obscure marine invertebrates, the young or adolescent boys did much better than older men. Older men devote their time to fishing, boys to the gathering and persecution of all sorts of small animals. The adult men simply may have forgotten some of the things they learned in their younger age. In any event, *Callinectes*, *Leptodius* and *Glyptoxanthus* and *Pilumnus* are all egg-bearing species in their view. The female of the *Callinectes* carries the eggs under its carapace. The *Glyptoxanthus* delivers its eggs in the cold season, which is the reversal of the usual Seri idea about the reproductive season of the marine invertebrates and other animals.

● [857]

Seasonality

Here again there is distinct tendency to associate the rarity or abundance of animals with the season. Half of the species, according to the informants, are equally common in the hot or the cold season but the other half occur predominatly

9:Malkin E-5 (1953-1955)1962 NU31 Seri NU31

X

INSECTS AND ARACHNOIDS

114 Altogether information has been collected concerning 92 species of insects, scorpions, ticks, myriapods and arachnoids.

Economic uses

262 [114] McGee says that "good many insects" are part of the Seri diet, although he does not specify just which they were nor how significant. There is no doubt that in his days, the insects played some role in the Seris' food and that they were probably far more important in the distant past, in the [177] XVIII and early XIX centuries, before large flocks of livestock, horses and cattle of the Spanish rancheros offered excellent opportunities to supplement the usual diet.

Of all this but minor traces remain today. The Seris even have forgotten which insects had been eaten by their ancestors. Apart from the bees, only the Sphingid caterpillar has been indicated as "eaten in the past, but not now." As for the bees, [263] their honey still is part of the Seri diet. But with the availability of sugar, even this addiction dwindles.

† 825 ● 857 Other than this I have been unable to discover any uses whatever, except perhaps as playthings of little boys, with the usual torture in view. The *Cicada* is most significant of these, of which more later.

Pets

231 [171] The only insect pet is a *Cicada*. This insect is usually tied to a long thread, its forewings partly clipped off and then released into the air like a kite. Local Mexicans also provide their own boys with a similar kind of toy.

Hunting

222 Only bees are hunted. They are usually flushed out of the cave shelters in the mountains. The operation is accomplished without the use of smoke. The honey is cut out with a knife.

Taxonomy

* 825 Seris' ideas of association of various insects are very loose. Few insects are recognized to form natural groupings; bees, butterflies, wasps, spiders are most distinct. However, there are all sorts of gradations blending confusedly with each other, often dependent on the knowledge and interest of particular informants.

Simple recognition is not always present. Out of 92 forms, 13 the informants could not identify, simply saying that they didn't know them. *Cicindela lemniscata*, *Melanotus cribricollis*, *Horistonotus*, *Meloid*, *Oxacis*, both species of *Cymatodera*, *Photopis*, *Scolopsella*, tiny Scarab, *Leptoremus*, *Homolocorus*, and *Reduviid*—all these were in the

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* 825 it is said to live "in refuse, fish and fish offal and only in the fishing camp." This is one that one must reconcile with the Seris' simultaneous belief that it is parasitic on dogs and that it sucks human blood as well. More difficulty here creates their belief that it is found only in the camp but that the dogs on Tiburon are free from it.

The Phasmids interestingly are associated with trees and sticks, a very correct notion and the Mantids also with the trees.

However, the information is incomplete and apart from the few cases cited above usually contradictory and hazy.

Toxic Insects

Only 19 species out of 92, or little more than 20% of the total, are considered toxic in anyway. Unlike in most of the other phases of the Seri knowledge of the natural history of insects, the natural groupings are quite clear. The three main groups the Seris consider toxic or harmful are the Arachnids, the Arachnoids (*Acarina* included) and the *Hymenoptera*, all very much as one would expect. In addition few beetles and bugs complement the list of the dangerous creatures. tures.

Among the *Hymonoptera* are all of the species listed, with the exception of the bee. This may be due to the fact that the bee in the Seri country is the stingless Melipoind (?). Of the toxic kind, *Pepsis* (the Tarantula hawk) is probably most feared. The sting the Seris think is very painful but disappears after a few minutes as it contains [152] little venom. A plant is applied to the bite and also taken internally with hot water. The *Pepsis* must [857] be really feared because the informants assured me it was one insect the children preferred not to play with—an excellent confirmation of the caution. *Chlorion aeriatus*, the Sphecid wasp, induces [752] similar symptoms by its sting. Here as a cure, Vic's mentholate tablets were said to be used, [177] smeared on the injured spot. This cure is also applied by the Mexicans and the Seris probably adopted it from them. The sting of this wasp is [753] considered more dangerous to children than to adults. The Velvet wasps[12] (Multillids) are also supposed to sting with the rear of the body causing some pain. Finally the *Hemisia*, and Anthrophorid bee inflict a good bite but otherwise are harmless.

Arachnids on the whole are more feared than the *Hymenoptera* and include what the Seris believe to be the most dangerous of all terrestrial arthropods, with a very good justification. The effects of the damage inflicted by these creatures is more lasting and overpowering. The Black Widow easily takes first place and is feared as much as the gecko or the rattler. Some Seris even claim it is the most dangerous of all creatures. It [753] may cause death, they say, although usually one can do with a 2-3 day illness. However, to small children the bite (or as they say "sting" owing

[12] *Ptiloglossa mexicana* causes swelling and much pain lasting 2-3 hours and is considered most unpleasant of all Hymenopterans.

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*825 on the other hand usually falls very close to what happens in the natural situation. Here cultural factors enter: the Seri boys habit of collecting eggs.

[857]

In general, in association with the development, the insignificance or complete absence of the male's parental function is well recognized. Only in the birds and mammals occasionally male's interest in the young had been indicated but even that rarely.

Food

In this field the Seris' knowledge is much better than their knowledge of the development. Herbivores and carnivores are usually quite correctly identified, at least for the majority of the animal groups. Crustaceans they think are largely scavengers—with great degree of accuracy. Predators and their victoms are as a rule scaled down according to the size. Some animals are considered relatively or completely free from predation and when this is so, reasons were usually stated in terms of some peculiarity of structure, size or behaviour. Power of flight figures strongly in this, because only a few birds, they thought, are subject to predation.

DISTRIBUTION

a) Geographical

[182] Knowledge of the geographical distribution of animals as expected is a function of the acquaintance with the particular area or locality and of the frequency of visits to them. It also indicates strong association with the ecology of the habitat, with such features as presence or absence of sand, rocks, types of bottom in waters and so forth. On the relative scale, once more the mammals are best known, insects least.

b) Seasonal

General suggestion of the greater number of species occurring in the hot than in the rainy season runs through all classes of animals. But while in most birds included, the suggestion is only slightly in favor of the hot season, for the reptiles and amphibia it is overwhelmingly in favor of the summer. Oddly, there is no such clear cut association between the presence of insects and season except for few select groups. The *Lepidoptera* and *Neuroptera* are, according to the Seris, largely creatures of warmth. while the *Orthoptera* are of the rains. In general this short of knowledge is quite conspicuous.

c) Ecological

Here the Seris excell and this knowledge of habitats of a very large number of animals is considerable and perhaps more solid than any other feature of the natural history. In species after species, in all groups, habitat preferences were stated (and correctly). It is interesting that the detailed information here was available for practically all listed species of birds, molluscs and fishes. Great deal of information was also pro-

[P.56 A]

vided for other creatures and even 2/3 of the insects. This indicates on one hand the connection between this type of knowledge and economic activity of the adults and on the other hand between the Seri boys' habit to collect and play with all sorts of animals from very early age. This knowledge of the habitats sometimes is even reflected in the aboriginal name of the animal such as for example the use of suffix or prefix *ax* meaning water in several forms associated with water.

Migrations

In contrast to the ecological distribution, knowledge of animals' migrations stands somewhere very near the very bottom in the richness, detail and accuracy. There is but bare suggestion of migration among the mammals and birds and where it does exist among the latter it curiously includes all three overwintering species. This is in contrast to this lack of knowledge or perhaps interest (or both) of migrations of all other animals, Seris' knowledge of the fish migration is much richer. Here at least there is a distinction between the migrating numbers and the size of fish: large fishes migrating supposedly singly, little ones in "millions."

Rhythmic Activity

Rhythmic differentiation is interesting because it clearly divides animals into the nocturnal, diurnal or those that are active in day and at night and because there is a clear association by the groups. Thus all marine animals are considered as both diurnal and nocturnal. But there are also differences in the relative degree of knowledge of different classes. While reptiles, amphibians and mammals stand at the top, the knowledge of this type of behaviour in birds is very fragmentary and in the insects scant and inconclusive, while for the molluscs non-existent.

In this respect, the reptiles probably are most clearly defined and best known.

There is also a clear recognition of the existence of the noon siesta or at least of slowing up of the animal activity. But this applies to the terrestrial animals and there is no suggestion of the siesta for the inhabitants of the sea.

Toxicity

At the apex of toxicity as a group stand unquestionably reptiles and amphibians, with the insects coming next and the marine animals which I loosely brought together under the heading of "miscellaneous" a poor third. Of the reptiles and amphibians 11 species are considered toxic, in various degrees and another seven as dangerous, 44 and 28% respectively, making the total an impressive 72% of all reported species. Among the insects about 20% are considered dangerous and fewer yet toxic; among the mammals fewer yet, with the bat only listed among the toxic forms and that on a disputed evidence; among the birds the eagle as the only dangerous beast and that admittedly on the hearsay; and finally among the molluscs none at all.

The fact is that only rarely these ideas were amiss and only few forms are believed dangerous

000 wear ceremonial feathers as did our western Indians. I saw no skin or
164 cutaneous disease, or evidence of tuberculosis or of trachoma---the curse of our Indians.

142 One boy-child of five years was a handsome child---fat, round,
302 sturdy, with roving great black eyes, large thick lips, a picture of
[241] perfect health. He was almost naked. His hair was done in a pigtail
[657] with a red string braided into it. His face like all the others was dirty, but he waded into the shallow water with a short spear and I saw him catch two crabs with his little harpoon. The water did not bother his face.

415 They had no plates or eating tools, except large deep clam shells,
412 cast up by the sea, which served as cups and dippers. Their long, keen
264 belt knives were used for cutting, carving or skinning, and always the
[259] fingers for eating. They gathered in a circle around an olla of seeds of long grass growing on the sea bottom prepared by winnowing, parching and grinding, and then cooked with turtle oil. Each one dipped his or her fingers into the olla and conveyed them to the mouth without losing a drop, and licked them off with great relish.

231 The dogs eat with the family. There were six or seven half-starved
264 ones. If someone picked up a piece of turtle flipper the dog often took the first lick at it, bit off a piece or licked it before it reached the owner's mouth. The dogs were not punished. They were just slapped to keep them out of the pots.

123 We had a great time that evening in Seriland. The young man played
534 his violin. This consisted of a hollow box cut out of a *palo verde*
[224] tree, and a piece of pine about sixteen inches long; terminating in a
[283] hollow where a single peg was fitted. The one string was twisted deer
[237] sinew, and the bridge was a small round clam shell at the far end. The
[533] bow was a small bent stick and some black horsehair. On the handle was a wad of rosin fastened underneath. By fingering this string a few weak squeaky notes were made, and this was the classical music of the Seris.

Manuel Encina seized his gourd rattle and began chanting. Herrera tapped a tin can and I beat on an inverted basket and the orchestra
535 was in full swing. A young girl, Rosa, dragged out a turtle shell and
123 standing on it began to dance. This dance consisted of stepping up and down quickly with each foot alternately, and this stamping, barefooted, emitted a hollow sound. Every once in a while I let out an
[124] Indian yell which pleased the Seris very much. For two hours they had a real swell time. We took one flashlight of the proceeding.

[342] Each family was in their hut, which afforded very slight shelter
[365] as they were only partially roofed over and the sides were broken
[354] down in places. The huts were all adjoining and each had a little
[361] campfire, which did not give much illumination, so the dancing was in semi-darkness.

[text continues on p. 163]